Algebra 1-2

Name ANSWER KEY

Period _____ Date _____

UNIT 6 REVIEW PACKET

Directions: **In the box provided next to each target section, put an (S) if you were able to complete the section by *yourSELF*, an (H) if you received a *minimal* amount of *HELP* from me, a classmate, or another source, or a (D) if you felt the section was *DIFFICULT* and required you to get *a lot* of help. This will help provide you by giving you feedback as to what topics you should be focusing on as you prepare for the test.** THIS IS DUE THE DAY OF THE TEST.

Target 6A

Solve each system by graphing. Tell whether the system has *one solution*, *infinitely many solutions*, or *no solution*. If it has *one solution*, state what the point is.

1. $y = 3x + 5$

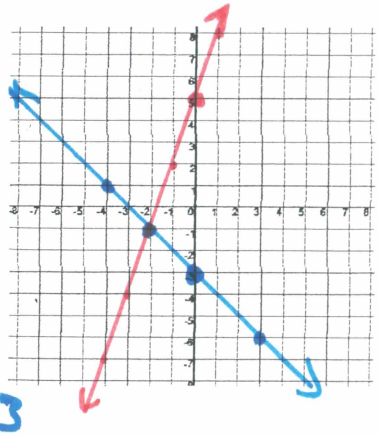
$x + y = -3$

$-x \quad -x$

$m = \frac{3}{1}$ $b = 5$

$y = -x - 3$

$m = \frac{-1}{1}$ $b = -3$



How many solutions? 1 SOLUTION

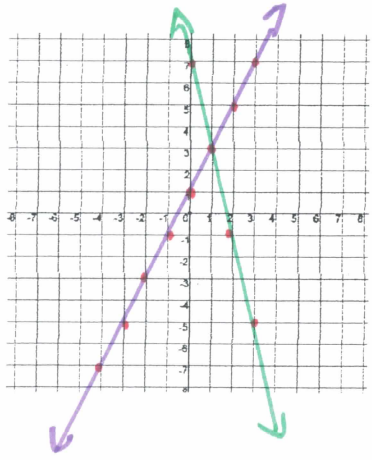
Solution point (-2, -1)

2. $y = 2x + 1$

$y = -4x + 7$

$m = \frac{2}{1}$ $b = 1$

$m = \frac{-4}{1}$ $b = 7$



How many solutions? 1 SOLUTION

Solution point (1, 3)

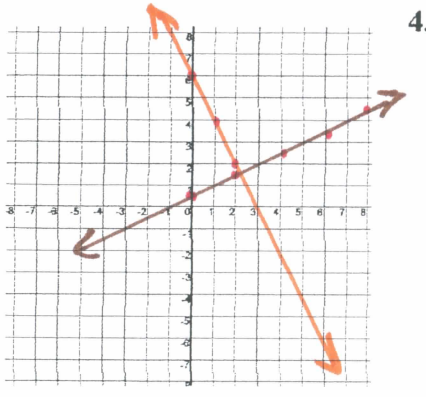
3. $2x + y = 8$

$y = (1/2)x + 1/2$

$m = \frac{1}{2}$ $b = \frac{1}{2}$

$y = -2x + 8$

$m = \frac{-2}{1}$ $b = 8$



How many solutions? 1 SOLUTION

Solution point (2.25, 1.5)

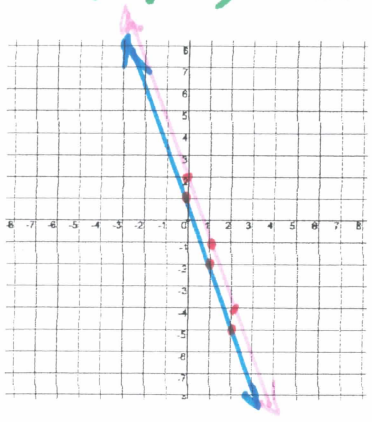
4. $y = -3x + 2$

$m = \frac{-3}{1}$ $b = 2$

$3x + y = 1$

$y = -3x + 1$

$m = \frac{-3}{1}$ $b = 1$



How many solutions? NO SOLUTIONS

Solution point _____

Target 6B

Solve each system by using substitution. Hint – If there is not an equation with a variable isolated then rearrange one!

5. $x - y = 13$ ⇒ $x = y + 13$

$y - x = -13$

$y - (y+13) = -13$

$y - y - 13 = -13$

$-13 = -13$

TRUE

∞ # OF SOLUTIONS

6. $3x - y = 4$ (1, -1)

$x + 5y = -4$ ⇒ $x = -5y - 4$

$3(-5y - 4) - y = 4$

$-15y - 12 - y = 4$

$-16y - 12 = 4$

$-16y = 16$

$y = -1$

7. $x + y = 4$

$y = 7x + 4$

$x + (7x + 4) = 4$

$8x + 4 = 4$

$8x = 0$

$x = 0$

$0 + y = 4$

$y = 4$

(0, 4)

Solve each system by elimination.

8. $x + y = 19$

$+ \quad x - y = -7$

$2x = 12$

$x = 6$

$6 + y = 19$

$y = 13$

(6, 13)

9. $-3x + 4y = 29$

$+ \quad 3x + 2y = -17$

$6y = 12$

$y = 2$

$-3x + 4(2) = 29$

$-3x + 8 = 29$

$-3x = 21$

$x = -7$

(-7, 2)

10. $(4x - y = 105) \cdot 7$

$x + 7y = -10$

$28x - 7y = 735$

$+ \quad x + 7y = -10$

$29x = 725$

$x = 25$

$25 + 7y = -10$

$7y = -35$

$y = -5$

(25, -5)

11. $4x - 9y = 61$

$(10x + 3y = 25) \cdot 3$

$4x - 9y = 61$

$+ \; 30x + 9y = 75$

$34x = 136$

$x = 4$

$4(4) - 9y = 61$

$16 - 9y = 61$

$-9y = 45$

$y = -5$

(4, -5)

Solve each system by Cramer's Rule.

12. $-4x - 3y = 5$

$3x - 2y = -8$

13. $x - 3y = 1$

$2x + 2y = 10$

14. $-4x - 2y = 20$

$2x + y = 19$

Target 6C

Write a system of equations to model each problem and solve. Make sure to define your variables!

15. Claire bought three bars of soap and five sponges for $2.31. Steve bought five bars of soap and three sponges for $3.05. Find the cost of each item.

.52x = SOAP
.15 = y = SPONGES

$5(3x + 5y = 2.31)$ → $15x + 25y = 11.55$
$3(5x + 3y = 3.05)$ → $-(15x + 9y = 9.15)$

$16y = 2.40$
$y = .15$

$3x + 5(.15) = 2.31$
$3x + .75 = 2.31$
$3x = 1.56$
$x = .52$

16. Two groups of people order food at a restaurant. One group orders 4 hamburgers and 7 chicken sandwiches for $34.50. The other group orders 8 hamburgers and 3 chicken sandwiches for $30.50. Find the cost of each item.

BURGERS = 2.50
CHICKEN = 3.50

$(4B + 7C = 34.50) \cdot -2$ → $-8B - 14C = -69.00$
$8B + 3C = 30.50$ → $+\ 8B + 3C = 30.50$

$-11C = -38.50$
$C = 3.50$

$8B + 3(3.50) = 30.50$
$8B + 10.50 = 30.50$
$8B = 20.00$
$B = 2.50$

17. The sum of two numbers is 25. Their difference is 9. What are the two numbers?

8 = SMALL
17 = LARGE

$S + L = 25 \Rightarrow L + S = 25$
$L - S = 9$ → $+\ L - S = 9$

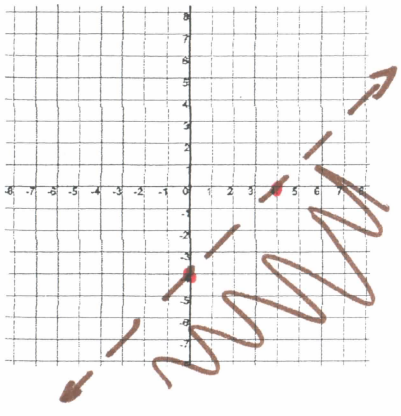
$2L = 34$
$L = 17$

$S + 17 = 25$
$S = 8$

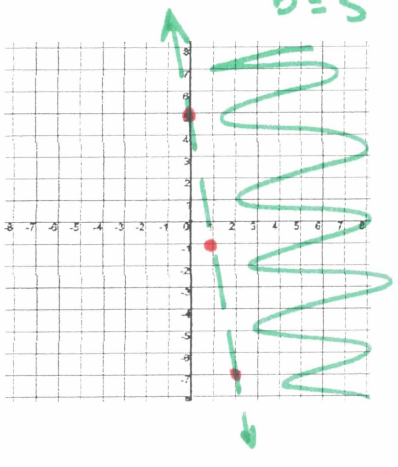
Target 6D

Graph each linear inequality.

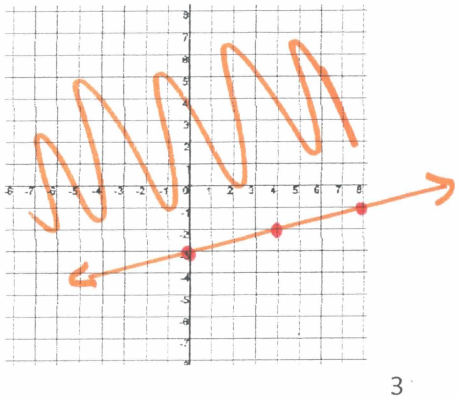
18. $y < x - 4$ $m = 1$, $b = -4$



19. $y > -6x + 5$ $m = \frac{-6}{1}$, $b = 5$

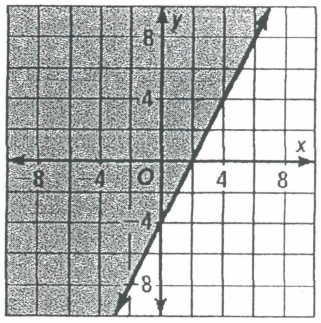


20. $y \geq \frac{1}{4}x - 3$ $m = \frac{1}{4}$, $b = -3$



Write the inequality shown in each graph.

21.

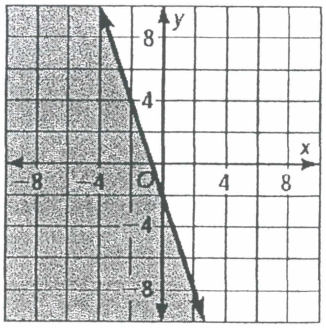


$m = \frac{2}{1} = 2$

$b = -4$

$y \geq 2x - 4$

22.



$m = \frac{-6}{2} = -3$

$b = -2$

$y \leq -3x - 2$

Target 6E

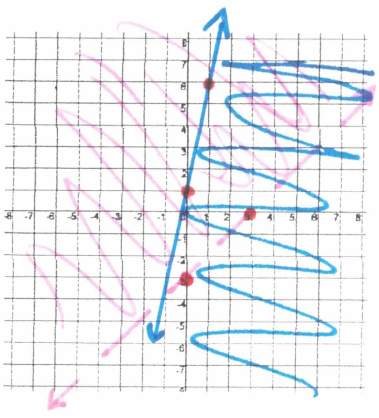
Solve each system of inequalities by graphing.

23. $y \leq 5x + 1$ → $m = \frac{5}{1}$ $b = 1$

$y > x - 3$

$m = \frac{1}{1}$

$b = -3$

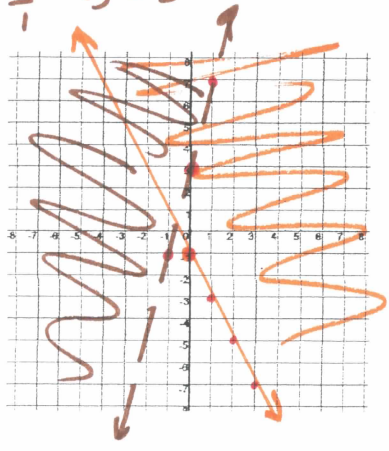


24. $y > 4x + 3$ $m = \frac{4}{1}$ $b = 3$

$y \geq -2x - 1$

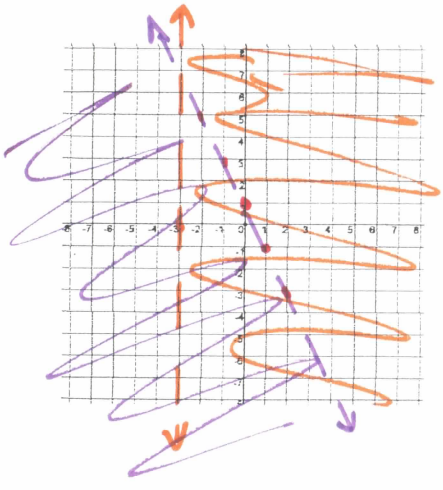
$m = \frac{-2}{1}$

$b = -1$



25. $y < -2x + 1$ $m = \frac{-2}{1}$ $b = 1$

$x > -3$



26. $y \leq 5$

$y \geq -x + 1$

$m = \frac{-1}{1}$

$b = 1$